

# **The Effect on the Performance of Listed Family and Non-family Firms**

## **Abstract**

**Purpose:** The purpose of this paper is to examine whether the ownership of public firms is related to accounting and market performance, comparing family and non-family listed firms.

**Design/methodology/approach:** We use regression analysis, considering a sample of Portuguese family and non-family firms for the period between 1999 and 2010.

**Findings:** Overall, the results show that family firms are older, are more indebted and have higher debt costs than non-family firms. However, they present lower levels of risk. The evidence suggests that family firms outperform non-family firms when we consider a market performance measure. The market performance of family-controlled firms is more sensitive to the crisis periods and age, compared to their counterparts. The empirical findings suggest that under economic adversity, the performance is especially compromised by the firms' age.

**Research limitations/implications:** A limitation of this study is the small size of the sample, which derives from the small size of the Portuguese stock market, the Euronext Lisbon.

**Originality/value:** This paper offers some insights on the ownership of public firms and firm performance by investigating a small European economy. The study also contributes to the stream of firm performance, considering new independent variables as determinants of firm performance, such as operational risk. Finally, the study examines the interaction between ownership and performance under both steady and adverse economic conditions, giving the opportunity to analyze whether firm performance differs according to market conditions.

**Keywords:** Market performance, Accounting performance, Family firms

**Classification:** Research Paper

## 1. Introduction

Over decades, several studies document evidence that family firms are common in publically-traded firms worldwide. La Porta *et al.* (1999) analyzed 27 countries, finding evidence that about 50% of firms in their sample were family-controlled. Faccio and Lang (2002) find that more than 60% of listed firms in France, Italy, and Germany are family firms. Sraer and Thesmar (2007) analyzed listed French firms and concluded that more than 60% of the firms are managed by founding families. Studies on the US document relatively lower percentage values for family firms, with Andersen and Reeb (2003) and Villalonga and Amit (2006)<sup>i</sup> finding percentages of 35 and 37, respectively. As regards Portugal, Faccio and Lang (2002) find evidence that family firms constitute about 60.34% of firms sampled and that in about 50% of the family firms, the controlling owner is in management.

Other studies centre on the main determinants of firm performance, particularly the accounting (Allouche *et al.*, 2008; Smith, 2008; Nunes *et al.*, 2012) and the market performance (Anderson and Reeb, 2003; Pérez-González, 2006; Martínez *et al.*, 2007; Sraer and Thesmar, 2007; Zhou, 2012). Although they focus on the effect of liquidity on firm performance (Deloof, 2003; Fagiolo and Luzzi, 2006; Oliveira and Fortunato, 2006; Moreno *et al.*, 2010) and on the relationship between debt and firm performance (Titman and Wessels, 1988; Chan *et al.*, 2003; La Rocca *et al.*, 2011, Moreno and Castillo, 2011), they did not examine the effects of operational risk and generalized economic adversity on the firms performance.

In this context, our study aims to investigate whether family firms outperform non-family counterparts, considering both accounting and market measures of firm performance as well as to analyze the firms' performance, conditioned by the financial and economic crisis, in order to test whether family firms are higher performers than their counterparts even in recession periods, considering a sample made up of the 58 Portuguese non-financial firms

listed on Euronext Lisbon for the period 1999 to 2010. From the full sample, 35 firms were classified as family firms (about 60%) and 23 as non-family firms.

This study contributes to the existing literature on the ownership of public firms and firm performance by investigating a small European economy. More specifically, it examines the performance of family firms in the context of Portugal. The history, capital market, and characteristics of businesses in this continental European country differ greatly from English-speaking countries, where most studies on family firms have been conducted. The study also contributes to the stream of firm performance, considering new independent variables as determinants of firm performance, such as the operational risk. Finally, the study examines the interaction between ownership and performance under both steady and adverse economic conditions. Analyzing periods of financial boom and of recession separately gives the opportunity to analyze whether firm performance differs according to market conditions. The results suggest that the influence of risk on firms' performance is different between family and non-family firms, but only for a performance measure. The evidence proposes that, under adverse economic conditions, performance is particularly affected by the firm's debt level. Overall, the empirical findings support the view that family firms outperform non-family firms.

The remainder of this paper is organised as follows. Section 2 provides a literature review and develops the research hypotheses. Section 3 presents the data, the variables and the method of analysis. Section 4 presents and discusses the research results. Finally, section 5 concludes the paper.

## **2. Literature Review and Hypotheses Development**

### *2.1. Family Firms, Non-family Firms and Performance*

One difficulty in this sort of study is the definition of family firms (FF) and non-family firms (NFF). Different studies have used different classifications of FF (Bennedsen and Nielsen, 2010). Most definitions include three main dimensions: families holding a significant part of the capital; family members retaining significant control over the firm and family members holding top management positions (Villalonga and Amit, 2006)<sup>ii</sup>. For example, Westhead *et al.* (2001) based their FF definition on the extent to which a firm is managed by members from a single dominant family group, with the firm being classified as FF if the family hold more than 50% of the shares. Anderson and Reeb (2003) use the percentage of equity owned by the founding family and the presence of family members on the board of directors, thus subscribing to a hybrid view of ownership and board control. Zahra (2005) asked, in a survey targeting a group of 2,000 US companies, whether firms were family owned.

Following La Porta *et al.* (2000) and Setia-Atmaja *et al.* (2009), we define FF as those in which the founding family or a family member controlled 20% or more of the equity, and was involved in the top management of the firm.

The arguments on the performance of FF compared to NFF are supported on the literature on agency theory (Jensen and Meckling, 1976; Jensen, 1986) and on corporate governance (Villalonga and Amit, 2006). According to Jensen and Meckling (1976) and Jensen (1986), agency costs diminish a firm's value. However, when the ownership and control of a firm are held by the same party, the agency costs associated with conflicts of interest and information asymmetries draw back (Jensen and Meckling, 1976). Consequently, FF have incentives to reduce agency conflicts and maximize firm value (Demsetz and Lehn, 1985). Higher levels of family firms' performance might occur from the better alignment of interests between shareholders and managers (Andersen and Reeb, 2003). Anderson *et al.* (2003) state that FF present fewer agency conflicts between equity and debt than non-family counterparts, reducing agency costs that might lead to higher levels of performance. In addition, family

shareholders have long-term outlooks and implement optimal investment policies over the long run, which results in improved performance (Stein, 1989). In line with this argument, James (1999) concludes that FF invest more efficiently than NFF because the family wants to pass the firm onto succeeding generations and Le Breton-Miller and Miller (2006) argue that the long-term investments of family-controlled firms grow from specific governance conditions and produce competitive asymmetries, which create capabilities that are sustainable.

Sraer and Thesmar (2007) analyze the performance of French FF over the period 1994-2000, finding that FF outperform other firms. Their results are in line with those of Anderson and Reeb (2003), who analyze the relationship between founding-family ownership and firm performance in the US market, concluding that FF perform better than non-family ones. More precisely, they find that when family members serve as CEO, performance is better than with outside CEOs, suggesting that family ownership is an elective organizational structure. Scholes *et al.* (2012) investigate listed family firms in the UK between 2007 and 2009, finding that FF have superior profitability and considerably less debt than their counterparts, but have a lower growth rate. Allouche *et al.* (2008) find evidence of better performance among Japanese FF and other authors find evidence of FF higher performance in advanced and competitive economies (Anderson and Reeb, 2004; Peng and Jiang, 2010; Essen *et al.*, 2011). Moreover, some literature documents the success of FF in markets considered as weak and developing institutional environments (Bertrand and Schoar, 2006). Indeed, the evidence suggests that FF do well in underdeveloped capital markets (Bhattacharya and Ravikumar, 2001), weak formal protection for minority investors (Burkart *et al.*, 2003), and poor commercial law (Gilson, 2007), which might be our case, as we focus on a small European economy.

However, some prior literature suggests that FF can lead to poorer firm performance than NFF. Fama and Jensen (1985) argue that large concentrated stockholders such as founding families may derive greater benefits from following objectives such as technological innovation, firm growth, or firm survival than from enhancing shareholder value. Moreover, founding families may pursue actions that maximize their personal utility, serving family interests, instead of profit maximization (Demsetz and Lehn, 1985; DeAngelo and DeAngelo, 2000). Shleifer and Vishny (1997) suggest that one big cost of concentrated family ownership arises when unqualified family members run the firm. Several other reasons are aimed to explain the FF lower performance than NFF (Gedajlovic *et al.*, 2012), such as the expropriation of wealth by inside family owners from minority shareholders (Bertrand *et al.*, 2002), the misallocation of resources (Morck and Yeung, 2003), the inefficient allocation of resources (Almeida and Wolfenzon, 2006), and the feeling of obligation one family member feels to aid another at a time of need (Villalonga and Amit, 2010).

Analyzing a sample of Canadian firms, Morck *et al.* (1988) find that heirs and founders are outperformed by widely held corporations, which is in agreement with the results of Holderness and Sheehan (1988), who find that FF have lower levels of Tobin's Q ratio than their counterparts. Pérez-González (2006) uses US data from CEO successions to examine the impact of inherited control on firm performance. Their results suggest that heirs may be worse managers than outside CEOs. These results have been confirmed by Bennedsen and Nielsen (2010), who investigate the impact of family characteristics in corporate decision-making and the consequence of this on firm performance, using a sample of Danish firms analyzed for the 1994-2002 period. The authors found that family successions have a large negative causal impact on firm performance, concluding that professional and non-family CEOs provide extremely valuable services to the organizations they head.

Other studies find mixed or inconclusive results (Khanna and Rivkin, 2001; Claessens *et al.*, 2002). Using a Bayesian approach, Block *et al.* (2011) find that whereas family and founder ownership are associated with superior performance, the results for family and founder management are more ambiguous. Some researchers conclude that the evidence concerning family firms' performance is sensitive to the different definitions of FF (Westhead and Cowling, 1998; Maury, 2006; Miller *et al.*, 2007; Allouche *et al.*, 2008), which could explain the mixed results obtained so far.

Although there are no consensual conclusions concerning the corporate performance of family firms, we expect FF to have better performance levels than their counterparts. In this context, and in order to compare the results with previous evidence, we formulate the following classic hypothesis:

**H<sub>1</sub>:** *Family firms outperform non-family firms.*

## 2.2. Risk

Agency theory suggests that the higher the ownership level (which is likely to occur in FF), the greater the alignment between owners and managers (Jensen and Meckling, 1976; Fama and Jensen, 1983). Consequently, this interest alignment between family and the firm may motivate the implementation of innovative ideas that stimulate growth and improve firm performance (Zahra, 2005), but increase business risk. Jensen and Meckling (1976) suggest that business risk, among other variables, influences firm performance. Indeed, there is broad evidence that firms with highly volatile operating earnings are more likely to be exposed to risk (Fama and Jensen, 1983; Titman and Wessels, 1988; Adams and Buckle, 2003).

As shown in the literature, managers, like individuals, tend to be risk-averse (Mehran, 1995). The evidence that family firms are more adverse to financial risk than non-family

firms (Mishra and McConaughy, 1999) leads us to predict that they are also more adverse to operational risk. On this basis, we formulate hypothesis three:

**H<sub>2</sub>:** *The negative relationship between operational risk and firm performance is stronger for family firms than non-family firms.*

### 2.3. Employment

There is no specific literature concerning the relationship between employment and firm performance. However, according to the Atkinson (1984) model, employment is associated with versatility and the ability to perform different functions and roles in the firm's business activities. This contributes to functional flexibility, which, in our point of view, can lead to relatively superior performance. Lepak *et al.* (2003) find evidence that a greater use of knowledge-based employment is positively associated with firm performance. Moreover, Zhou (2012) finds evidence of a positive relationship between employment and profitability.

Based on this evidence and on the institutional context effect on FF (Bhattacharya and Ravikumar, 2001; Burkart *et al.*, 2003), we formulate the following hypothesis:

**H<sub>3</sub>:** *The positive relationship between employment and firm performance is stronger for family firms than non-family firms.*

### 2.4. Crisis

There has been no examination of the phenomenon of performance with particular focus on the surrounding economic environment. Indeed, the relationship between crisis and performance has not yet been explored in the European context.

In turbulent economic and market conditions, there are fewer investment opportunities, which can lead to relatively lower performance. Indeed, Mitton (2002) finds evidence of lower returns during the East Asian financial crisis of 1997-1998.



One characteristic of recession periods is the high volatility of share prices (Veronesi, 1999). Moreover, investors tend to be irrational and to overreact to poor market conditions (Glode *et al.*, 2010). Consequently, high volatility and investor overreaction may counteract the value premium of founder firms. Zhou (2012) states that during a crisis, unqualified management may increase costs for FF, which diminishes more the FF than the NFF performance. In addition, other arguments can reinforce the assumption that the expected negative relationship between crisis and firm performance will be stronger for FF than NFF, such as the feeling of obligation the family members feel to aid another at a time of need (Villalonga and Amit, 2010), the bigger incentive that NFF have to take risky projects (Anderson and Reeb, 2003) and the role of CEO or board members being family members or not. Indeed, Pérez-González (2006) and Bennedsen and Nielsen (2010) find evidence that heirs may be worse managers than outside CEOs, concluding that professional and non-family CEOs provide extremely valuable services to the organizations they head. Based on this reasoning, we formulate the last hypothesis:

**H<sub>4</sub>:** *The negative relationship between crisis and firm performance is stronger for family firms than non-family firms.*

### **3. Research Method**

#### *3.1. Data*

The sample consists of all the Portuguese non-financial FF and NFF listed on the Euronext Lisbon during the period from 1999 to 2010. The specificity of the sample period is a result of data availability. Data were obtained from SABI, a private database provided by Bureau van Dijk and complemented with additional information collected from annual company reports. There are 58 firms in the full sample, corresponding to 583 observations. The number of observations in the sample is conditioned by the size of the Portuguese stock market as well

as the availability of data. Given that this study aims to investigate the relationship between the ownership of public firms and firm performance, we consider also two research sub-samples: the FF sub-sample of 35 firms, corresponding to 377 observations and the NFF sub-sample of 23 firms and 206 observations.

FF constitute about 60% of the global sample, a percentage similar to that found by Faccio and Lang (2002) for Portugal (60.34%). The evidence that almost 65% of the observations are related to FF is consistent with the evidence that family shareholders are common in publically traded firms (Claessens *et al.*, 2000; Faccio and Lang, 2002; Anderson and Reeb, 2003; Villalonga and Amit, 2006).

### *3.2. Variables and Research Model*

Because we want to examine the influence of public firms' ownership on firm performance, our dependent variable is performance (PERF).

We consider two kinds of performance: accounting performance and market performance. To analyze accounting performance, we use three measures: 1) the operating return on assets (OROA), calculated as the operating earnings divided by total assets. We use OROA because it is unaffected by any changes in capital structure, which determines the corporate tax base; 2) return on equity (ROE), computed as the ratio of net earnings to equity and 3) sales growth (SG), calculated as the change in the natural logarithm of sales. To measure market performance, and following Pérez-González (2006), we employ the market-to-book ratio (MB), computed as the market value to the book value of the equity. We opt to consider MB instead of Tobin's Q ratio, since Zhou (2012) has recently shown that Tobin's Q is not an accurate measure of performance during crisis periods, because investors tend to be irrational and share price volatility is high.

As regards independent variables, we consider the operational risk (RISK), the employment (EMPLOY) and market crisis (CRISIS) variables.

Following Mishra and McConaughy (1999), we measure RISK as the standard deviation (calculated over the past three years) of operating income before depreciation to annual sales. We define EMPLOY as the natural logarithm of the number of employees in the firm (Zhou, 2012). In order to identify CRISIS, we consider a dummy variable which is one if a fiscal year is considered a year of financial recession, and zero otherwise. We assume that financial crisis really strikes the financial market in 2008-2010, thus, CRISIS will take the value one for 2008, 2009 and 2010, and zero otherwise.

As control variables, we consider firm age (AGE), leverage (LEV) and the cost of debt (COST).

Like previous studies (Bhaired and Lucey, 2009; Nunes *et al.*, 2012), we expect a positive relationship between AGE, calculated as the natural logarithm of the difference between incorporation year and a fiscal year, and firms performance. We consider LEV as the ratio of total debt to total assets (Mishra and McConaughy, 1999; Chen *et al.*, 2010). It cannot be predicted, *a priori*, the expected signal for this variable. On the one hand, it is expected a positive relationship between debt and performance because, according to the theory of free cash flow (Jensen, 1986), debt is a disciplining device. On the other hand, and based on the assumptions of the Pecking Order Theory (Myers, 1984; Myers and Majluf, 1984), profitable firms have low levels of debt capital because they are able to use internal financing (Rajan and Zingales, 1995). In this context, it is expected a negative relationship between profitability and debt. Although some authors find a negative relation between the two variables (Rajan and Zingales, 1995; Flannery and Rangan, 2006; La Rocca *et al.*, 2011), other authors question the expected relationship between them (Constantinides and Grundy, 1989; Barclay and Smith, 1995). COST is considered as the after-tax cost of debt, calculated

as the ratio of interest expenses by interest-bearing short-term and long-term debt, multiplied by one minus the marginal tax rate. It is expected a negative relationship between the COST and the firms' performance.

In order to analyze the relationship between performance and their determinants, we employ the following regression model:

$$\begin{aligned} \text{PERF}_{i,t} = & \alpha + \beta_1 \text{FF}_{i,t} + \beta_2 \text{RISK\_FF}_{i,t} + \beta_3 \text{EMPLOY\_FF}_{i,t} + \beta_4 \text{CRISIS\_FF}_{i,t} + \\ & + \beta_5 \text{RISK}_{i,t} + \beta_6 \text{EMPLOY}_{i,t} + \beta_7 \text{CRISIS}_{i,t} + \beta_8 \text{AGE}_{i,t} + \beta_9 \text{LEV}_{i,t} + \\ & + \beta_{10} \text{COST}_{i,t} + \text{IND}_i + \varepsilon_{i,t} \end{aligned} \quad (1)$$

PERF consists of the different measures of accounting and market performance already specified;  $\text{FF}_{i,t}$  is a dummy variable which is one if a firm is considered a family firm, and zero otherwise;  $\text{RISK\_FF}$ ,  $\text{EMPLOY\_FF}$  and  $\text{CRISIS\_FF}$  are interaction terms between the dummy that identifies FF and the performance determinants (independent variables): RISK, EMPLOY and CRISIS. We consider the variables included in the interaction variables also as standalone variables, in order to see if the effects of these variables are statistically different between family and non-family firms. AGE, LEV and COST are control variables. IND are industry dummy variables representing the main industry sectors: 1) primary sector (agriculture and fishing); 2) secondary sector (manufacturing and construction); and 3) tertiary sector (services and commerce).

We use pooled OLS regressions and present the standard errors corrected for heteroscedasticity and covariance, based on the White's (1980) heteroscedasticity consistent standard errors method.

Table 1 describes the variables used in this study.

(Insert Table 1 about here)

In order to analyze whether the determinants of performance differ between expansion and recession periods, we split the sample in two sub-periods: before the crisis (1999-2007) and during the crisis (2008-2010).

## 4. Research Results

### 4.1. Descriptive statistics

Table 2 reports the descriptive statistics for the variables used in the subsequent analysis for FF and NFF, as well as the difference in means. The last columns present the t-statistic and Wilcoxon Z statistics for differences in mean and median values between the two subsamples, respectively. We winsorize the variables at their 1 and 99 percentile levels to mitigate the effect of outliers.

(Insert Table 2 about here)

Although FF present higher values than NFF for all the performance measures, the mean differences are not statistically significant, suggesting that FF do not significantly outperform NFF. FF are different from NFF in what concerns RISK, EMPLOY, AGE, LEV and COST. FF are older, have more employees, are more indebted and the cost of debt is higher, but present lower levels of operational risk.

The Wilcoxon test statistics for significance of differences in medians indicate that the median value for the variables RISK, EMPLOY, AGE and COST are significantly different for FF and NFF. The median differences for OROA and LEV are statistically significant at the 5% and 10% level, respectively.

Table 3 shows the performance measures means before the crisis period (1999-2007) and during the crisis (2008-2010), as well as the differences in mean and median variables between the two periods, considering all the firms (Panel A), FF (Panel B) and NFF (Panel C).

(Insert Table 3 about here)

Panel A shows that OROA, ROE and MB differ by period. Before the crisis period, the firms are more profitable than in the crisis period, except for the ROE results, which suggests

that ROE is not an appropriate measure of firm performance. The difference in results before and during the crisis is due to FF (Panel B), since none of the mean differences for NFF is statistically significant (Panel C). Consequently, the results suggest that FF are more sensitive to crisis periods than NFF.

The Wilcoxon test statistics for significance of differences in medians indicate that, with the exception of ROE for the global sample, the median value for all the variables are statistically insignificant or only significant at the 10% level, before and during crisis period, which suggest no major effects of outliers.

Table 4 reports the Pearson correlations for the independent variables for FF (Panel A) and NFF (Panel B).

(Insert Table 4 about here)

For both the sub-samples, the correlation coefficients are low (below 0.48). Consequently, correlation coefficients do not appear to be sufficiently large to cause concern about multicollinearity problems. None of the Variance Inflation Factors (VIFs) are greater than 10, indicating no problematic degree of collinearity.

#### *4.2. Regression estimators*

Table 5 reports the regression (1) results considering the three accounting measures of performance (OROA, ROE and SG) and the market performance measure (MB). The t-statistics are corrected for heteroscedasticity using the White (1980) method.

(Insert Table 5 about here)

The best explanatory models for the relationship between the independent variables and the firms' performance are the ones in which the dependent variable is the MB and the OROA, so we will mainly interpret these regression results. The model that presents the lower

$R^2$  value is the ROE model, suggesting that ROE is not an appropriate measure of firm performance, which is consistent with the conclusion obtained in Table 3.

In what concerns the MB regression, the results show that the FF coefficient is positive and statistically significant, giving support to the hypothesis that FF outperform NFF ( $H_1$ ). The effects of RISK, EMPLOY and CRISIS variables are not statistically different between family and non-family firms. Consequently, the results do not show evidence for  $H_2$ ,  $H_3$  and  $H_4$ , respectively. The AGE coefficient is negative and statistically significant, which suggests that the older the firm, the lower the MB.

Concerning the OROA regression results, we can see that FF do not outperform NFF, giving no support to  $H_1$ . The variables that explain the OROA measure of performance are the EMPLOY, AGE and LEV. The results show a positive and significant coefficient for the EMPLOY variable, as expected. However, the coefficient is not statistically different from zero in what concerns the interaction effect between EMPLOY and family influence. Thus, although the variables are statistically different between family and non-family firms, the results do not support the hypothesis that the positive relationship between employment and firm performance is stronger for family firms than non-family firms ( $H_3$ ). As expected, the relationship between AGE and performance is positive. Finally, the results show that the higher the leverage, the lower the OROA.

In addition, we would like to see whether the variables included in the model have different effects before and during the crisis, considering the market performance measure.

In order to analyze whether the determinants of market performance differ between expansion and recession periods, we run a regression similar to (1), but considering the subsample of FF and the interaction variables related to crisis period. Table 6 shows on the basis of the MB measure of performance.

(Insert Table 6 about here)

The results show that crisis affects negatively the firm performance, consistent with the Table 5 results. In addition, MB is negatively influenced by AGE.

For robustness reasons, we consider some additional variables, such as the board independence and the firm size. Our results do not differ significantly<sup>iii</sup>, so our main conclusions do not change. In addition, we vary the definition of FF in order to analyse if results are stable when ownership varies, considering FF as the ones with at least one individual or a family with more than 25% of the voting rights. Compared to Table 5 results, the percentage of the total variation in performance explained by the model ( $R^2$ ) slightly increases for the OROA and ROE dependent variables, and decreases for the other two (SG and MB), suggesting that evidence concerning FF performance is somewhat sensitive to the different FF definitions (Westhead and Cowling, 1998; Maury, 2006; Miller *et al.*, 2007; Allouche *et al.*, 2008).

#### *4.3. Results discussion*

Based on Table 2 results, we can see that although the FF present higher mean values for all the performance measures, the differences between the performance means of FF and NFF are not statistically significant. Consequently, we find no evidence for the hypothesis that FF outperform NFF ( $H_1$ ). These results are consistent with others that are inconclusive (Khanna and Rivkin, 2001; Claessens *et al.*, 2002; Block *et al.*, 2011; Zhou, 2012). Consequently, our evidence does not provide significant enough results, suggesting that the evidence concerning family firm performance might be sensitive to the different definitions of performance as well as sensitive to the definition of FF (Westhead and Cowling, 1998; Maury, 2006; Miller *et al.*, 2007; Allouche *et al.*, 2008).



The higher level of EMPLOY can be associated with the bigger size of firms (it might be a surrogate for size) as well as with the higher level of operational risk, influenced by high personnel costs.

The empirical evidence that FF are more indebted than NFF is in line with the evidence of Pindado and Torre (2008), Setia-Atmaja *et al.* (2009) and Setia-Atmaja (2010), but contrary to the results of Mishra and McConaughy (1999) and Allouche *et al.* (2008). The evidence that FF are more dependent on lenders than NFF might be explained by the lower level of risk for FF, which allows for higher levels of debt. In addition, older business owners tend to present lower levels of preference for equity (Romano *et al.*, 2000), and, in our sample, FF are indeed older. This may also suggest that FF are less concerned about financial risk, since their cost of debt is higher, but are more concerned with maintaining their control over the firm than their counterparts (Pindado and Torre, 2008). Finally, FF might use debt as a substitute for independent directors (Setia-Atmaja *et al.*, 2009; Setia-Atmaja, 2010).

Table 3 results suggest that FF are more sensitive to crisis periods than NFF. In addition, it seems that ROE present some difficulties as a performance indicator (Martínez *et al.*, 2007). One possible explanation for the difference of OROA and ROE accounting measures before and during crisis might be the associated with the FF's enhanced ability to generate higher operational earnings but its lower capacity to generate financial earnings, which is related to a weaker financial performance. Indeed, FF are more indebted and have higher debt costs, which is associated with the higher interest expenses and lower net earnings, used to calculate ROE. One reason that might explain the market measure (MB) performance results is associated with the fact that market measures are mainly driven by the market price of shares (Zhou, 2012). High volatility of share price is one of the characteristics of recession periods (Veronesi, 1999). In addition, investors are prone to be irrational and overreact to poor market conditions during recessions (Glode *et al.*, 2010). Consequently,

during crisis period, share prices are undervalued and MB declines. Indeed, we calculate the average monthly return volatility of the sample, finding that during the crisis period (2008-2010), the volatility of monthly returns is higher than in the rest of the sample period, which is in agreement with the arguments above.

Although the lower levels of the correlation coefficients (Table 4) do not cause concern about multicollinearity problems, the negative correlation between COST and LEV for FF and the very low correlation coefficient for NFF is somewhat strange. However, it might be associated with the weight of interest-bearing debt that results in interest expenses and the other liabilities, free of expenses.

The evidence that **one of the** regression **models** (Table 5) with higher  $R^2$  is the one in which the dependent variable is MB, together with the Table 2 results (although not statistically significant, the higher t-value for the mean differences is for the MB variable), indicates that the market performance (MB) is the measure that best explains firm performance.

Considering the market performance measure, we find evidence for the hypothesis that FF outperform NFF ( $H_1$ ), which is in line with previous studies (Andersen and Reeb, 2003; Sraer and Thesmar, 2007; Allouche *et al.*, 2008; Scholes *et al.*, 2012). However, in relation to the accountability measures, the results are consistent with others that are inconclusive (Claessens *et al.*, 2002; Zhou, 2012). Consequently, our evidence does not provide significant enough results, suggesting that the evidence concerning family firm performance is sensitive to the different definitions of performance.

The AGE coefficient shows a negative relationship between age and performance. Although it does not have the expected signal, one possible reason might be the life cycle of firms. Older firms are more likely to be in the maturity phase, with lower levels of growth opportunities, and, consequently, with lower levels of market performance.

Concerning the accounting performance measures, the best model is the one in which the dependent variable is OROA. Regarding employment, the results show a positive and significant relationship between EMPLOY and OROA, suggesting that employment contributes to enhancing FF performance, which is in agreement with the results of Lepak *et al.* (2003) and Zhou (2012). This evidence might be associated with better skills to perform the requisite functions and roles in the firm's business activities, contributing to functional flexibility, and consequently, to higher levels of performance (Atkinson, 1984). The results do not show a positive relationship between EMPLOY and OROA for FF, not giving support to H<sub>3</sub>. However, we must be cautious when interpreting this result, because the employment variable might be a surrogate for size, not detecting a supposed higher implication of FF in the human resource management area.

AGE positively influences performance, which is in accordance with the evidence that older firms are more able to obtain higher levels of performance (Bhaïrd and Lucey, 2009; Nunes *et al.* (2012).

In what concerns the LEV coefficient, the results show a negative effect of debt on firm performance, which is in agreement with previous studies, such as those by Rajan and Zingales (1995), Flannery and Rangan (2006), Martínez *et al.* (2007) and La Rocca *et al.* (2011) and gives support to the Pecking Order Theory.

Considering the ROE performance measure, the coefficient on RISK shows that the higher the operational risk, the lower the profitability. The evidence that firms with high volatility of operating earnings are more likely to be exposed to risk (Fama and Jensen, 1983; Titman and Wessels, 1988; Adams and Buckle, 2003) may explain our results showing a negative impact of RISK on performance. However, the coefficient on RISK considering the interaction effect between RISK and FF is positive, showing a different effect of RISK on ROE between FF and NFF.

Finally, the results shown in Table 6 suggest that market performance is negatively affected by crisis.

## 5. Conclusion

This study investigates the relationship between the ownership of Portuguese public firms and both accounting and market performance, by comparing family and non-family firms using data for the period 1999 to 2010.

Overall, the empirical results suggest that FF outperform NFF, but only as regards the MB performance measure, which proposes that founding family presence is positively related to market performance. However, for accounting performance, the results do not provide support for the hypothesis that FF perform better than NFF. Consequently, our evidence does not provide significant enough results, suggesting that the evidence concerning family firm performance is sensitive to the different definitions of performance used.

Compared to their NFF counterparts, FF are more indebted and older, with higher debt costs and present lower levels of risk. The results show that family firms are more dependent on lenders than non-family companies, which is consistent with the evidence of Pindado and Torre (2008), Setia-Atmaja *et al.* (2009) and Setia-Atmaja (2010).

Before the crisis period, the firms were more profitable than in the crisis period, excluding the ROE results, which suggest that ROE is not an appropriate ratio for measuring firm performance (Martínez *et al.*, 2007). In addition, the CRISIS effect on performance is stronger for FF than NFF.

The evidence does not support the hypotheses that the negative relationship between performance and operational risk as well as crisis, and the positive relationship between performance and employment is stronger for family firms than non-family firms.

Finally, the results suggest some differences in the market measure performance before and during the crisis period, being the MB negatively influenced by crisis and by AGE.

Our study has some limitations. First, the sample is of small size, which is inherent to the small size of Portuguese capital market. Second, the analysed period is limited to the data availability. Third, the definition of family firms could influence the results.

In future research, we would like to analyse whether the performance is driven by family firms or founder let firms. Previous literature argues that family involvement in terms of ownership, management and control may not be enough to explain how families contribute to their business (Zellweger *et al.*, 2010). In this context, we would like to consider several dimensions of family-related social factors that create familiness (Pearson *et al.*, 2008), focusing on the family aspect of familiness (Zellweger *et al.*, 2010).

In addition, we would like to explore whether family firms differ from non-family firm in what concerns their main purposes. Family firms might have goals that are not necessarily the firms' growth and the wealth maximization (DeAngelo and DeAngelo, 2000; Chrisman *et al.*, 2009). Moreover, it will be interesting to see if public FF performance differs from their private counterparts. The former are market-oriented, so they need to respond to the market (shareholders, analysts and investors), which focuses on performance. Consequently, public FF are forced to assume a more disciplined strategy.

## References

- Adams, M. and Buckle, M. (2003), “The determinants of corporate financial performance in the Bermuda insurance market”, *Applied Financial Economics*, Vol. 13, pp. 133–143.
- Allouche, J., Amann, B., Jaussaud, J. and Kurashina, T. (2008), “The impact of family control on the performance and financial characteristics of family versus nonfamily businesses in Japan: A matched-pair investigation”, *Family Business Review*, Vol. 21 No. 4, pp. 315-329.
- Almeida, H. and Wolfenzon, D. (2006), “Should business groups be dismantled? The equilibrium costs of efficient internal capital markets”, *Journal of Financial Economics*, Vol. 79, pp. 99-144.
- Anderson, R. C. and Reeb, D. M. (2004), “Board composition: balancing family influence in S&P 500 firms”, *Administrative Science Quarterly*, Vol. 49, No. 2, pp. 209-237.
- Anderson, R. C. and Reeb, D. M. (2003), “Founding family ownership and firm performance: Evidence from the S&P 500”, *Journal of Finance*, Vol. 58 No. 3, pp. 1301-1328.
- Anderson, R. C., Mansi, S. A. and Reeb, D. M. (2003), “Founding family ownership and the agency cost of debt”, *Journal of Financial Economics*, Vol. 68, pp. 263-285.
- Atkinson, J. (1984), “Manpower strategies for flexible organizations”, *Personnel Management*, pp. 28-31.
- Barclay, M. J. and Smith, C. W. (1995), “The maturity structure of corporate debt”, *Journal of Finance*, Vol. 50, pp. 609-631.
- Bennedsen, M. and Nielsen, K. (2010), “Incentive and entrenchment effects in European ownership”, *Journal of Banking and Finance*, Vol. 34, pp. 2212-2229.
- Bertrand, M., Mehta, P. and Mullainathan, S. (2002), “Ferretting out tunneling: An application to Indian business groups”, *Quarterly Journal of Economics*, Vol. 117 No. 1, pp 121-148.

- Bertrand, M. and Schoar, A. (2006), "The role of family in family firms", *Journal of economic perspectives*, Vol. 20 No. 2, pp. 73-96.
- Bhaird, C. M. and Lucey, B. (2009), "Determinants of capital structure in Irish SMEs", *Small Business Economics*, Vol. 35 No. 5, pp. 357-375.
- Bhattacharya, U. And Ravikumar, B. (2001), "Capital markets and the evolution of family businesses", *Journal of Business & Leadership: Research, Practice, and Teaching*, Vol. 74, pp. 187-219.
- Block, J., Jaskiewicz, P. and Miller, D. (2011), "Ownership versus management effects on performance in family and founder companies: a Bayesian reconciliation", *Journal of Family Business Strategy*, Vol. 2 No. 4, pp. 232-245.
- Burkart, M., Pannunzi, F. and Shleifer, A. (2003), "Family firms", *Journal of Finance*, Vol. 58, pp. 2167-2202.
- Chan, L., Karceski, J. and Lakonishok, J. (2003), "The level and persistence of growth rates", *The Journal of Finance*, Vol. 58, pp. 643-684.
- Chen, S., Chen, X., Cheng, Q. and Shevlin, T. (2010), "Are family firms more or less tax aggressive?", *Journal of Financial Economics*, Vol. 95 No. 1, pp. 41-61.
- Chrisman, J. J., Chua, J. H. and Kellermanns, F. W. (2009), "Priorities, resource stocks, and performance in family and non-family firms", *Entrepreneurship Theory and Practice*, Vol. 33 No. 3, pp. 739-760.
- Claessens, S. S., Djankov, J. P., Fan, L. H. and Lang, L. (2002), "Disentangling the Incentive and Entrenchment Effects of Large Shareholdings", *Journal of Finance*, Vol. 57, pp. 741-772.
- Claessens, S., Djankov, S. and Lang, L. (2000), "The separation of ownership and control in East Asian corporations", *Journal of Financial Economics*, Vol. 58, pp. 81-112.

- Constantinides, G. and Grundy, B. D. (1989), “Optimal investment with stock repurchase and financing as signals”, *Review of Financial Studies*, Vol. 4, pp. 445-466.
- DeAngelo, H. and DeAngelo, L. (2000), “Controlling stockholders and the disciplinary role of corporate payout policy: A study of the Times Mirror Company”, *Journal of Financial Economics*, Vol. 56, pp. 153-207.
- Deloof, M. (2003), “Does working capital management affect profitability of Belgian firms”, *Journal of Business Finance and Accounting*, Vol. 30, pp. 573-588.
- Demsetz, H. and Lehn, K. (1985), “The structure of corporate ownership: Causes and consequences”, *Journal of Political Economy*, Vol. 93, pp. 1155-1177.
- Essen, M. V., Carney, M., Gedajlovic, E. R. and Heugens, P. P. (2011), “Do U.S. Publicly-Listed Family Firms Differ? Does it Matter? A Meta-Analysis”, *Working paper*. Available at SSRN: <http://ssrn.com/abstract=1837517>.
- Faccio, M. and Lang, L. (2002), “The ultimate ownership of Western European Corporations”, *Journal of Financial Economics*, Vol. 65, pp. 365-395.
- Fagiolo, G. and Luzzi, A. (2006), “Do liquidity constraints matter in explaining firm size and growth? Some evidence from the Italian manufacturing industry”, *Industrial and Corporate Change*, Vol. 15, pp. 1–39.
- Fama, E. and Jensen, M. (1985), “Organizational forms and investment decisions”, *Journal of Financial Economics*, Vol. 14, pp. 101-119.
- Fama, E. and Jensen, M. (1983), “The separation of ownership and control”, *Journal of Law and Economics*, Vol. 26, pp. 301-328.
- Flannery, M. J. and Rangan, K. P. (2006), “Partial adjustment toward target capital structure”, *Journal of Financial Economics*, Vol. 79, pp. 469-506.



Gaud, P., Elion, J., Hoesli, M. and Bender, A. (2005), "The Capital Structure of Swiss Companies: An Empirical Analysis Using Dynamic Panel Data", *European Financial Management Review*, Vol. 11 No. 1, pp. 51-70.

Gedajlovic, E., Carney, M., Chrisman, J. J. and Kellermanns, F. W. (2012), "The adolescence of family firm research: Taking stock and planning for the future", *Journal of Management*, Vol. 38 No. 4, pp. 1010-1037.

Gilson, R. J. (2007), "Controlling family shareholders in developing countries: Anchoring relational exchange", *Stanford Law Review*, Vol. 60, pp. 633-656.

Glode, V., Hollifield, B., Kacperczyk, M. and Kogan, S. (2010), "Is investor rationality time varying? Evidence from the mutual fund industry". working paper, NBER working papers, 20 January.

Holderness, C. G. and Sheehan, D. P. (1988), "The role of majority shareholders in publicly held corporations", *Journal of Financial Economics*, Vol. 20, pp. 317-346.

James, H. (1999), "Owner as manager, extended horizons and the family firm", *International Journal of the Economics of Business*, Vol. 6, pp. 41-56.

Jensen, M. (1986), "Agency costs of free cash flow, corporate finance, and takeovers", *American Economic Review*, Vol. 76, pp. 323-339.

Jensen, M. and Meckling, W. (1976), "Theory of the firm: managerial behaviour, agency cost and ownership structure", *Journal of Financial Economics*, Vol. 3, pp. 305-360.

Khanna, T. And Rivkin, J. (2001), "Estimating the performance effects of business groups in emerging markets", *Strategic Management Journal*, Vol. 22 No. 1, pp. 45-74.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. W. (2000), "Agency problems and dividend policies around the world", *Journal of Finance*, Vol. 55 No. 1, pp. 1-33.

- La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (1999), "Corporate ownership around the world", *Journal of Finance*, Vol. LIV No. 2, pp. 471-517.
- La Rocca, M., La Rocca, T. and Cariola, A. (2011), "Capital structure decisions during a firm's life cycle", *Small Business Economics*, Vol. 37 No. 1, pp. 107-130.
- Le Breton-Miller, I. and Miller, D. (2006), "Why do some family businesses out-compete? Governance, long-term orientation, and sustainable capability", *Entrepreneurship Theory and Practice*, Vol. 30, pp. 731-746.
- Lepak, D. P., Takeuchi, R. and Snell, S. A. (2003), "Employment flexibility and firm performance: Examining the interaction effects of employment mode, environmental dynamism, and technological intensity", *Journal of Management*, Vol. 29 No. 5, pp. 681-703.
- Martínez, J., Stöhr, B. and Quiroga, B. (2007), "Family ownership and firm performance: Evidence from public companies in Chile", *Family Business Review*, Vol. 20 No. 2, pp. 83-94.
- Maury, B. (2006), "Family Ownership and Firm Performance: Empirical Evidence from Western European Corporations", *Journal of Corporate Finance*, Vol. 12 No. 2, pp. 321-341.
- Mehran, H. (1995), "Executive compensation structure, ownership, and firm performance", *Journal of Financial Economics*, Vol. 38, pp. 163-184.
- Miller, D., Le Breton-Miller, I., Lester, R. H. and Cannella Jr., A. A. (2007), "Are family firms really superior performers?", *Journal of Corporate Finance*, Vol. 13 No. 5, pp. 829-858.
- Mishra, C. S. and McConaughy, D. L. (1999), "Founding family control and capital structure: the risk of loss of control and the aversion to debt", *Entrepreneurship theory and practice*, summer, pp. 53-64.

- Mitton, T. (2002), “A cross-firm analysis of the impact of corporate governance on the East Asian financial crisis”, *Journal of Financial Economics*, Vol. 64, pp. 215-241.
- Morck, R., Shleifer, A. and Vishny, R. (1988), “Management ownership and market valuation: An empirical analysis”, *Journal of Financial Economics*, Vol. 20, pp. 293-315.
- Morck, R. and Yeung, B. (2003), “Agency problems in large business groups”, *Entrepreneurship Theory and Practice*, Vol. 27 No. 4, pp. 367-382.
- Moreno, J. and Castillo, L. (2011), “Corporate growth, age and ownership structure: empirical evidence in Spanish firms”, *Journal of Business Economics and Management*, Vol. 12, pp. 164-196.
- Moreno, J., Castillo, L. and Masere, E. (2010), “Firm size and entrepreneurial characteristics: evidence from the SME sector in Argentina”, *Journal of Business Economics and Management*, Vol. 11, pp. 259-282.
- Myers, S. C. (1984), “The capital structure puzzle”, *Journal of Finance*, Vol. 39 No. 3, pp. 575-592.
- Myers, S. C. and Majluf, N. S. (1984), “Corporate financing and investments decisions: when firms have information that investors do not have”, *Journal of Financial Economics*, Vol. 13, pp. 187-221.
- Nunes, P. M., Viveiros, A. and Serrasqueiro, Z. (2012), “Are the determinants of young SME profitability different? Empirical evidence using dynamic estimators”, *Journal of Business Economics and Management*, Vol. 13 No. 3, pp. 443-470.
- Oliveira, B. and Fortunato, A. (2006), “Firm growth and liquidity constraints: a dynamic analysis”, *Small Business Economics*, Vol. 27, pp. 139-156.

- Pearson, A. W., Carr, J. C. and Shaw, J. C. (2008), "Toward a theory of familiness: A social capital perspective", *Entrepreneurship Theory and Practice*, Vol. 32 No. 6, pp. 949–969.
- Peng, M. W. and Jiang, Y. (2010), "Institutions behind family ownership and control in large firms", *Journal of Management Studies*, Vol. 47 No. 2, pp. 253-273.
- Pérez-González, F. (2006), "Inherited control and firm performance", *American Economic Review*, Vol. 96, pp. 1559-1588.
- Pindado, J. and Torre, C. (2008), "Financial decisions as determinants of ownership structure: Evidence from Spanish family controlled firms", *Managerial Finance*, Vol. 34 No. 12, pp. 868-885.
- Rajan, R. G. and Zingales, L. (1995), "What do we know about capital structure? Some evidence from international data", *Journal of Finance*, Vol. 50, pp. 1421-1460.
- Romano, C. A., Tanewski, G. A. and Smyrnios, K. X. (2000), "Capital structure decision making: A model for family business", *Journal of Business Venturing*, Vol. 16, pp. 285-310.
- Scholes, L., Wilson, N., Wright, M. and Noke, H. (2012), "Listed family firms: Industrial and geographical context, governance and performance", working paper, <http://ssrn.com/abstract=2002906>, 12 May.
- Setia-Atmaja, L. S. (2010), "Dividend and debt policies of family controlled firms: the impact of board independence", *International Journal of Managerial Finance*, Vol. 6 No. 2, pp. 128-142.
- Setia-Atmaja, L. S., Tanewski, G. A. and Skully, M. (2009), "The role of dividends, debt and board structure in the governance of family-controlled firms", *Journal of Business Finance & Accounting*, Vol. 36 No. 7&8, pp. 863-898.

Shleifer, A. and Vishny, R. (1997), "A survey of corporate governance", *Journal of Finance*, Vol. 52, pp. 737-783.

Smith, M. (2008), "Differences between family and non-family SMEs, a comparative study of Austria and Belgium", *Journal of Management and Organization*, Vol. 14, pp. 40-58.

Sraer, D. and Thesmar, D. (2007), "Performance and behaviour of family firms: evidence from the French stock market", *Journal of European Economic Association*, Vol. 5 No. 4, pp. 709-751.

Stein, J. (1989), "Efficient capital markets, inefficient firms: A model of myopic corporate behaviour", *Quarterly Journal of Economics*, November, pp. 655-669.

Titman, S. and Wessels, R. (1988), "The determinants of capital structure choice", *The Journal of Finance*, Vol. 43, pp. 1-19.

Veronesi, P. (1999), "Stock investors overreaction to bad news in good times: A rational expectation equilibrium model", *Review of Financial Studies*, Vol. 12 No. 5, pp. 975-1007.

Villalonga, B. and Amit, R. (2010), "Family control of firms and industries", *Financial Management*, Vol. 39 No. 3, pp. 863-904.

Villalonga, B. and Amit, R. (2006), "How do family ownership, control, and management, affect firm value?", *Journal of Financial Economics*, Vol. 80 No. 2, pp. 385-417.

Westhead, P., Cowling, M. and Howorth, C. (2001), "The development of family companies: management and ownership imperatives", *Family Business Review*, Vol. 14, pp. 369-385.

Westhead, P. and Cowling, M. (1998), "Family firm research: The need for a methodological rethink", *Entrepreneurial Theory & Practice*, Vol. 23, pp. 31-56.

White, H. (1980), "A Heteroscedasticity-consistent covariance matrix estimator and a direct test for heteroscedasticity", *Econometrica*, Vol. 48 No. 4, pp. 149-170.

Zahra, S. (2005), "Entrepreneurial risk taking in family firms", *Family Business Review*, Vol. 18 No. 1, pp. 369-385.

Zellweger, T. M., Eddleston, K. A. and Kellermanns, F. W. (2010), "Exploring the concept of familiness: Introducing family firm identity", *Journal of Family Business Strategy*, Vol. 1, pp. 54–63.

Zhou, H. (2012), "Are family firms better performers during financial crisis?", working paper, <http://ssrn.com/abstract=1990250>, 12 February.

---

<sup>i</sup> Villalonga and Amit (2006) report that 19% of sample firms have control enhancing mechanisms such as dual shares, pyramids and voting agreements and La Porta *et al.* (1999) find evidence of the presence of pyramid structures and crossholdings in countries with strong legal investor protection.

<sup>ii</sup> For more detail about family ownership, management and control, see Zellweger *et al.* (2010).

<sup>iii</sup> For simplicity and space reasons, we do not report the results. However, they are available upon request to authors.